

Claim 19 (original) The method of claim 18 wherein the spool supplying tape includes a friction braking mechanism.

Claim 20 (original) The method of claim 15 wherein the automated cut and restart procedure is conducted with a program controller.

Claim 21 (original) The method of claim 15 wherein the associated electrical control means includes a software programmed computer.

Claim 22 (original) The method of claim 15 wherein the operational movement at which the head member is controlled does not exceed the speed at which the backing layer is removed.

Claim 23 (original) The method of claim 15 wherein the compaction roller means is moved along the length of already deposited unbacked tape to apply additional compressive action.

REMARKS

All original claims 1-23 in the present application are believed sufficiently amended to correct minor grammatical errors as well as to avoid all further basis for objection or rejection found in the outstanding Office Action. Still further corrections have also been made on page 9, line 17 of the present specification to include the submission of a corrected Figure 2 drawing in the originally filed application which is annexed to the present amendment in order to avoid duplicate numeral use for different structural elements in the disclosed invention. A reconsideration of the restriction requirement further contained in the outstanding Office Action is also respectfully requested. The presently amended apparatus and method claims have now become linked by reason of reciting "said tape laying head member having operating mechanisms physically incorporated therein to perform the entire method" found in all of the now amended method claims 15-23. A still further objection in the outstanding Office Action to original claims 3-4 is also believed adequately resolved by amendment of both claims

to remove further recitation of method steps in said apparatus claims.

Original claims 1-4, 5, 7-8 and 10-11 stand rejected in the outstanding Office Action under 34USC102(b) as deemed anticipated by the Examiner based upon the cited Frank references (USP4,382,836). In doing so, the Examiner first relies upon finding in said reference a description of "a tape laying apparatus" which includes "automated cut and restart means", a "laterally moving head member", and which further includes "operationally cooperating mechanisms 18 and 94 to first remove layer S from tape T being continuously fed to the shape and thereafter severing a predetermined length of unbacked tape T from tape supply 29 while still being continuously fed. Such finding of similarity with the now claimed apparatus is respectfully deemed in error by reason of the major structural and operational distinctions which exist between the Frank reference and the now claimed invention. First of all, Frank requires a rotational rack assembly 16 having a pair of compacting blocks 26 and 28 in order to alternately shift tape travel when applying tape in an opposite direction. The now claimed apparatus structurally and operationally distinguishes therefrom by not requiring such elaborate rack assembly to alter the tape travel direction and does so in a far simpler and more expedient manner with rotation of the present head member 10 as shown on Figure 1 of the applicants' drawings. As for finding tape severance in the Frank apparatus to be the same as carried out in the now claimed apparatus, the Examiner's attention is respectfully directed to column 4, lines 16-41 in said reference where applying "a predetermined length of the unbacked tape" is described. The Frank apparatus requires "tape placement" to be suspended until said tape length has been severed as well as having the rotation rack assembly repositioned for tape placement in the reverse direction. Tape placement continues in the now claimed apparatus during tape severance which understandably minimizes apparatus downtime while also desirably increasing the amount of tape which can be deposited on the structural shape during a given time period. A still further important oversight by the Examiner can be found

with respect to finding operative cooperation of roller means 66 and 68 with tape severance means 98 and 100 in the Frank apparatus. The text in said reference is respectfully regarded not to support such conclusion on the part of the Examiner in several respects. Frank characterizes rollers 66 and 68 to be "guide" rollers only as distinct from the "pinch" rollers being employed in the now claimed apparatus. Moreover, as above explained, when severing a predetermined length of the unbacked tape as described in the Frank reference, it is therein stated that the tape severance occurs "when linear tape placement is stopped" as opposed to having the unbacked tape "being continuously fed" to the structural shape during the tape severance operation. A still further disparity found between Frank's description and the now claimed apparatus in this regard relates to a recital in the now amended claims for "preventing backward tape movement during tape severance". Such requirement occurs in the now claimed apparatus only when the recited pinch roller means are actuated during the tape severance procedure, as pointed out on pages 8-10 of the present application. It can only be reasonably concluded from the nature and number of disparities existing between said reference and the now claimed invention that one skilled in this art finds no disclosure or obvious suggestion of the present invention in this reference. Finally, a possible still further oversight by the Examiner relates to having both tape supply spool 20 and takeup spool 22 in the Frank apparatus not necessarily moving laterally with the tape application head 10. Specifically, all Figure 1-2 and 7 drawings in said reference disclose a physical separation to exist between both spool members and said head member as distinct from having all said members being physically joined together. The now claimed apparatus unquestionably distinguishes therefrom by having all operating mechanisms "physically incorporated" in the moving head.

Claim 6 stands rejected under 35USC103 as regarded by the Examiner to be unpatentable over Frank in further view of Kanbara et al (IS2005/0016670A1). The present applicants cannot agree with said basis for rejection in several respects. First of all, the braking mechanism for reel-out roll 187 in said reference is only

defined at page 20 to be of any suitable type. Accordingly, it can only remain speculative in unpermitted hindsight of the present applicants' own teachings to now designate said braking mechanism to be a "friction braking mechanism" as recited in the presently amended claims. Since the secondary Kanbara et al reference also utterly fails to obviously correct any of the above noted shortcomings found in the principal Frank reference, there can be no greater obvious suggestion of the now claimed apparatus and method found in said reference combination. Kanbara et al further relates to an entirely dissimilar art than the principal Frank reference. There is thereby no mention or obvious suggestion which can be found in either of said reference that even relates to the now claimed tape laying apparatus or its improved mode of operation. Such far simpler construction of the now claimed tape laying apparatus together with its far greater operating efficiency would simply not be found obviously suggested to one skilled in the art from reading these references together.


Claim 9 and 12 stand rejected under 35USC103 as also regarded by the Examiner to be unpatentable over the Frank reference. Applicants again cannot agree with the basis for such rejection which is said to be obviousness when severing the tape in a bias direction. In finding such obviousness, the Examiner is respectfully regarded to have further overlooked a requirement in the now claimed apparatus for "pinch rollers" to cooperate with said cutter means during the tape cutting action. An absence of said pinch rollers in the Frank reference as well as for the presently recited cooperation of said structural means to participate in the cutting action can only relegate such basis for rejection as further unpermitted hindsight of the present applicants' own teachings.

Remaining rejection of claims 13-14 under 35USC103 as regarded by the Examiner to be unpatentable over Frank in view of Evans et al (USP4,591,402) must also be regarded as erroneous by the present applicants. Employing the Evans et al associated electrical control means in the Frank tape laying apparatus would simply not remove any of the above noted structural and operational shortcomings found in Frank's apparatus. Accordingly, one

skilled in the art employing Evans et al associated electrical control means in the Frank apparatus would still remain subject to the same shortcomings and thereby not realize the entirely unexpected benefits afforded with the present invention.

In summary, it can only again be reasonably concluded from a thorough appraisal of all relied upon references that further rejection of the now amended claims as either anticipated or unpatentable over these references should not further be maintained. For all the above stated reasons, therefore, it is respectfully urged that all now amended claims 1-23 be allowed as patentably distinguishing over all references now being relied upon.

Respectfully submitted,

  
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CERTIFICATE OF MAILING

I HEREBY CERTIFY that this Amendment B was deposited with the Postal Service in an envelope addressed to the COMMISSIONER OF PATENTS, Box 1450, Alexandria, VA 22313-1450 on this 12th day of August 2005.

  
John F. McDevitt